

Taxonomic Notes on *Ophiopogon* of South Asia IV

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(Received on February 5, 1998)

Ophiopogon revolutus F.T.Wang & L.K.Dai is treated as conspecific with *O. griffithii* (Baker) Hook.f. *Ophiopogon griffithii* is variable especially in leaf shape and width. This species is new to Myanmar. It is noteworthy that *Ophiopogon kradungensis* M.N.Tamura shares several similar features with *O. griffithii*.

(Continued from J. Jpn. Bot. 74: 261–267, 1999)

Key words: *Ophiopogon griffithii*, *Ophiopogon kradungensis*, *Ophiopogon revolutus*, taxonomy

(6) *Ophiopogon griffithii* and *O. revolutus*

Baker (1879) described *Flueggea griffithii* based on the specimen collected by Griffith (no. 5839; Fig. 1) in the Patkai Range of northeastern India. This species was later transferred to *Ophiopogon* by Hooker (1892). Except for the descriptions based on the type by Baker and Hooker, there has been no reliable information for this species. As the type is in the fruiting stage, floral features of this species have not been known. In these respects, *O. griffithii* has been an insufficiently known species. In the course of this survey, I could find three flowering specimens which coincide well in vegetative characters with the type of *O. griffithii*. One is from Myanmar (R.J.Swinhoe 57, K), and the other two are from southwestern Yunnan, China [A.Henry 12171, 12171A (Figs. 2, 3A), K]. In both the type and the flowering specimens leaf blades are papery and glaucous on the lower surface, and in the latter specimens the anthers are adherent laterally, forming a cylin-

dric or slenderly conic tubular structure (Fig. 3A). In the specimens from Yunnan the tepals are widely spreading and reflexed (Figs. 2, 3A). After a close examination of all these specimens, I found that the characteristics of *O. griffithii* basically agree with those of *O. revolutus* F.T.Wang & L.K.Dai (1978) described from southwestern Yunnan. I could find no significant difference in both floral and vegetative characters between them. Therefore, *O. revolutus* is regarded here as synonymous with *O. griffithii*. *Ophiopogon griffithii* here circumscribed is variable especially in leaf width and shape. While some specimens have narrow, linear leaves [e.g., F.Kingdon-Ward 22603, BM (its scape is shown in Fig. 3B); A.F.G.Kerr 5300, BM; R. Geesink et al. 8140, K, P], others have relatively broad, narrowly elliptic or narrowly oblong leaves like the type (Fig. 1) and the specimen shown in Fig. 2.

Yang and Li (1990) and Yang (1997) recorded *O. griffithii* from southwestern Yunnan, and they regarded *O. griffithii* and *O. revolutus* as distinct species. Unfortu-

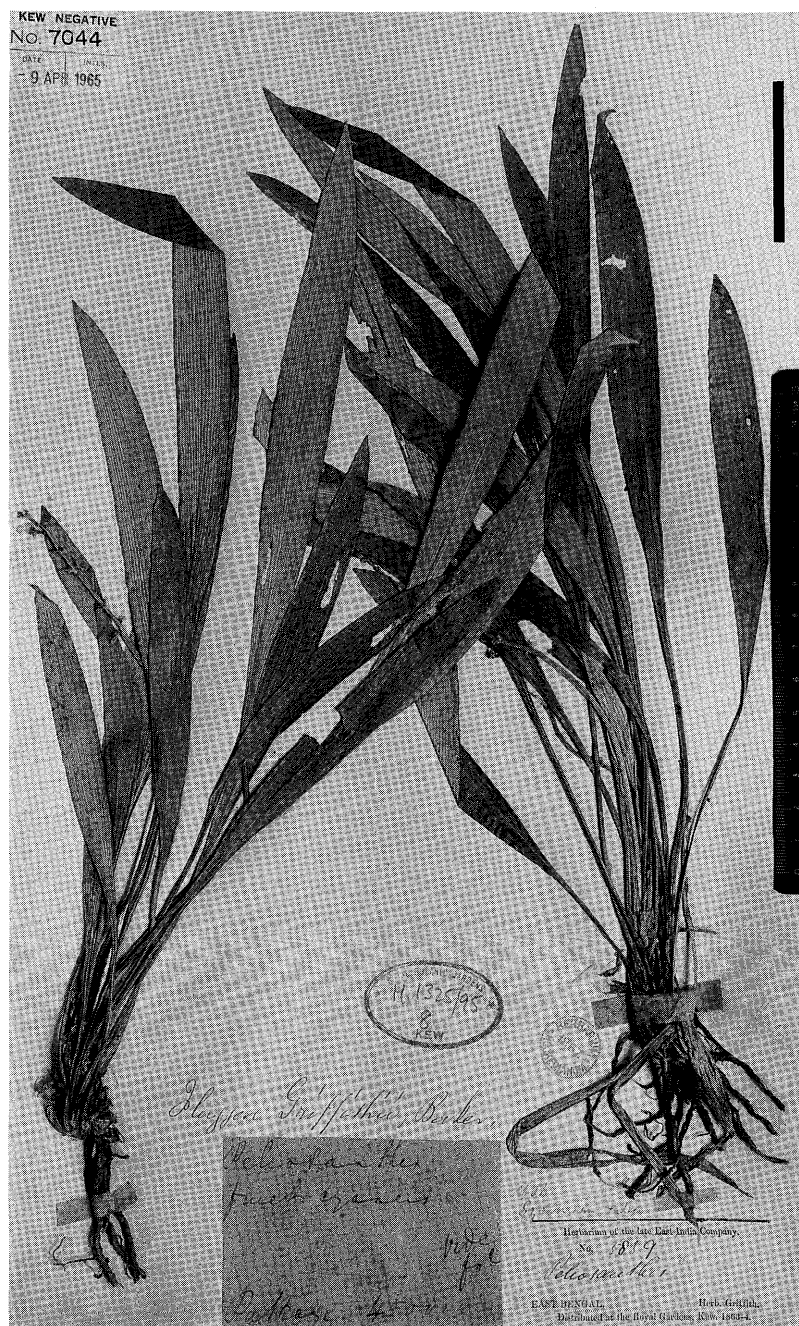


Fig. 1. Type specimen of *Ophiopogon griffithii* (Baker) Hook.f. (NE India, W. Griffith 5839, K). Scale bar (in the upper right corner) = 5 cm.

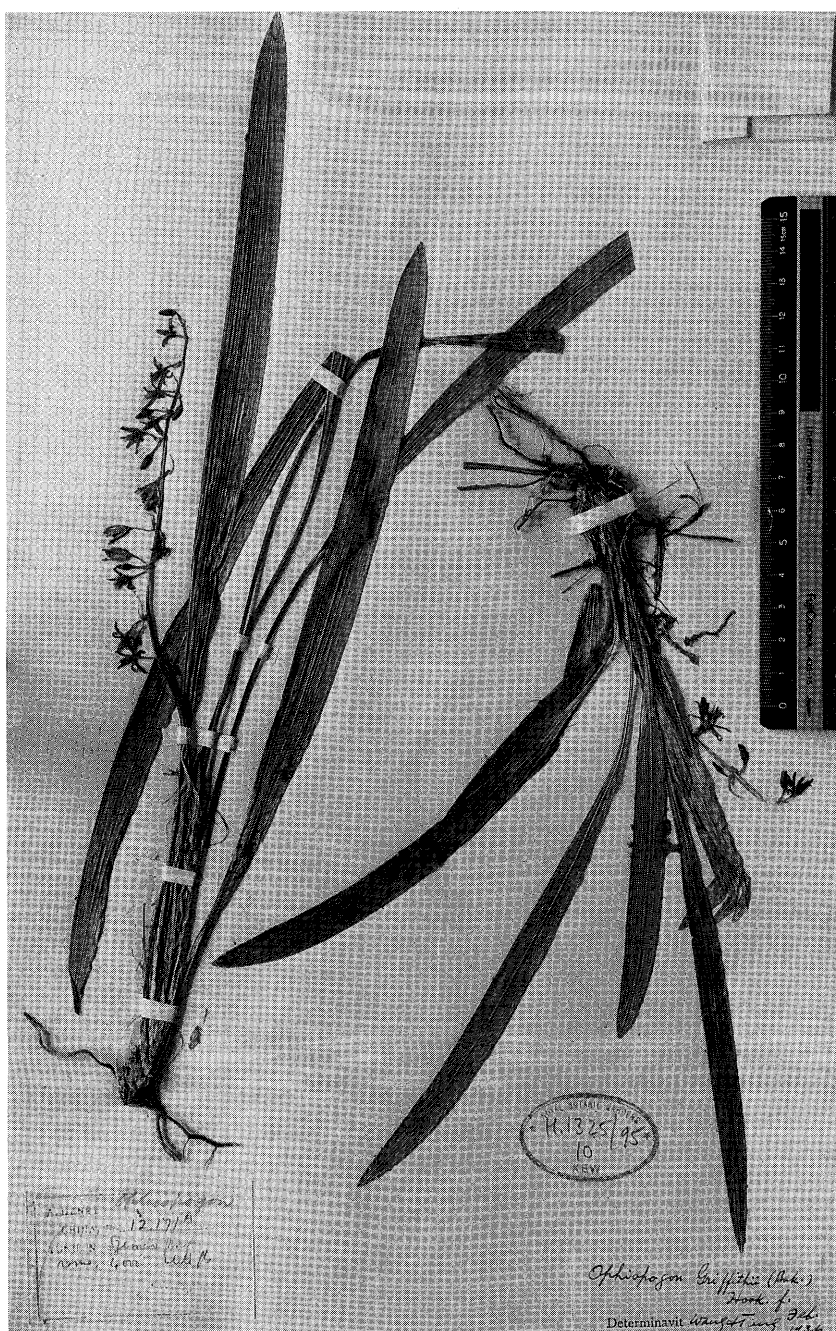


Fig. 2. A flowering specimen identified as *Ophiopogon griffithii* (SW Yunnan, China, A. Henry 12171A, K).

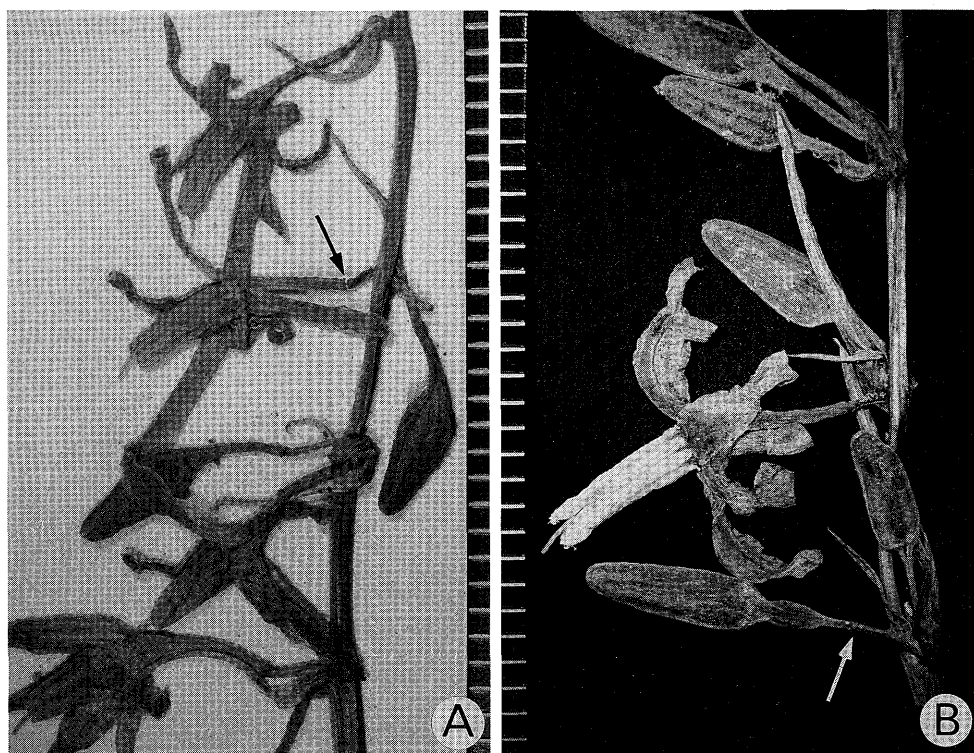


Fig. 3. Close-ups of a part of the inflorescence from two specimens identified as *Ophiopogon griffithii*, showing widely spreading and reflexed tepals, adherent anthers, and pedicels articulated in the lower part (articulation sites indicated by arrows). A. A specimen collected by A. Henry (12171A, K) in Yunnan, China. B. A specimen collected by F. Kingdon-Ward (22603, K) in west central Burma (Myanmar) (the scape shown here is from a small package attached to the sheet). This specimen (in Fig. 3B) has very slender linear leaves to 42 cm long and 4 mm wide. Scales in mm.

nately I have had no opportunity to examine the specimens they assigned to *O. griffithii*. So I cannot make a further remark on the identity of their specimens. Further survey on these specimens is needed.

Ophiopogon griffithii (Baker) Hook.f., Fl. Brit. India **6**: 270 (1892). [Figs. 1–3]

Flueggea griffithii Baker in J. Linn. Soc. **17**: 502 (1879), '*Fluggea*'.

Mondo japonicum (L.f.) var. *griffithii* (Baker) Farw. in Amer. Midl. Nat. **7**: 42 (1921).

Ophiopogon revolutus F.T. Wang & L.K. Dai in L.K. Dai and S.C. Chen (for au-

thorship see Chen et al. 1993) in F.T. Wang and Ts. Tang (eds.), Fl. Reip. Pop. Sin. **15**: 253, 156, t.52, f.1–3 (1978); M.N. Tamura in Shoei Jr. Coll. Ann. Rep. Stud. **23**: 64 (1991); Y.P. Yang in C.Y. Wu (ed.), Fl. Yunnan. **7**: 683, t.219, f.1, 2 (1997).

Glabrous perennial herb. Rootstock short, estoloniferous. Roots to 2.5 mm in diameter. Leaves fasciculate, narrowly elliptic, narrowly oblong, oblanceolate, linear-oblan- ceolate or linear, acute at apex, tapering to petiole, base with scarious wings forming a sheath, glaucous on abaxial surface, minutely serrulate on margins, with 5–23 longitudinal veins, papery, 20–54.5 cm long, 3–

18.5 mm wide. Scape more or less declinate, complanate, narrowly 2-winged, 14–30 cm long. Inflorescence racemose, 5–14.5 cm long. Floral buds narrowly conical. Flowers 1–3 in each axil of clustered bracts, cernuous, secund, white (A. Henry 12171, 12171A, K) or lilac (F. Kingdon-Ward 22603, BM). Bracts ovate to narrowly lanceolate, acute or acuminate at apex, minutely serrulate on margins in upper part, scarious, usually to 2 cm long. Pedicels 3.5–8.5 mm long incl. basal stalky part of perianth (true pedicels, excl. perianth part, 1.8–5 mm long), jointed around middle or in lower part. Perianth lobes 6, spreading and reflexed, lanceolate, 1-nerved, 5.5–9.7 mm long, 2.0–2.8 mm wide. Stamens 6. Anthers linear-lanceolate, adherent laterally (sometimes partially separate), 4.2–6.3 mm long. Filaments short, 0.4–1 mm long. Pistil 1. Style filiform, 5.4–8.2 mm long. Seeds with sarcotesta, globose to ellipsoid, 6.5–8 mm long, 5.5–6 mm across, dark blue (R. Geesink et al. 8140, K, P).

Distribution: NE India, Myanmar, N Thailand and SW China (SW Yunnan).

Specimens examined:

India. Upper Assam, Patkoye hills, alt. 4500 ft, W. Griffith 5839 (type of *O. griffithii*, K).

Myanmar. Mandalay Distr., 1926, fl., R. J. Swinhoe 57 (K); West Central Burma, Mindat, 3000–4500 ft, Aug. 30, 1956, fl., F. Kingdon-Ward 22603 (BM).

Thailand. Chiang Mai, Doi Chiang Dao, alt. 1750–2000 m, Jan. 7, 1975, fr., R. Geesink et al. 8140 (K, P); Doi Inthanon, alt. c. 2100 m, May 1, 1921, fl. (buds), A. F. G. Kerr 5300 (BM); *ibid.*, alt. 2500 m, Jan. 22, 1969, fr., H. P. Nooteboom et al. 838 (K); *ibid.*, alt. 2400–2600 m, Dec. 28, 1974, fr., R. Geesink et al. 7970 (K).

China. Yunnan, Szemao, fl., A. Henry 12171, 12171A (K).

(7) *Ophiopogon kradungensis*

Ophiopogon kradungensis was described by Tamura (1990) from northeastern Thailand. Until Tamura distinguished this species, the specimens of *O. kradungensis* had often been assigned to other species, such as

O. reptans Hook.f. and *O. malcolmsonii* Royle ex Hook.f. (cf., Tamura 1990). As far as I am aware, *O. kradungensis* is distinct from any other species. The vegetative parts of *O. kradungensis*, particularly of its narrow-leaved form (Fig. 4), closely resemble those of *O. reptans* (cf., Tanaka 1999). But, *O. kradungensis* differs from *O. reptans* in having generally longer scapes, (almost) entire bracts, longer adherent anthers, longer and widely spreading, reflexed tepals (Fig. 4), longer styles, etc. The resemblance between *O. kradungensis* and *O. reptans* appears only superficial. On the other hand, it is noteworthy that *O. kradungensis* and *O. griffithii* share several similar characteristics. For example, both species possess adherent narrowly lanceolate (or linear-lanceolate) anthers (cf., Fig. 3 for *O. griffithii*), widely spreading and reflexed tepals (Figs. 3, 4), pedicels articulated usually in the lower part (cf., Fig. 3 for *O. griffithii*), complanate scapes with two narrow wings, etc. There seems to be a possibility that the two species have a close relationship.

***Ophiopogon kradungensis* M.N. Tamura**
in Acta Phytotax. Geobot. 41: 2 (1990).

[Fig. 4]

Ophiopogon reptans auct. non. Hook.f. (in Fl. Brit. Ind. 6: 268): K. Larsen in Dansk Bot. Ark. 20: 40 (1961), saltem quoad specim. Sørensen et al. 7435.

Glabrous perennial herb. Roots ligneous, up to c. 3 mm in diameter. Stem procumbent, ascending in upper part, stiff, to more than 57.7 cm, 1.8–6 mm in diameter, bearing distant tufts of leaves arranged at intervals of 3.5–10 cm. Leaves linear, acute, vaginate at base with scarious wings, 7–13-veined, whitish between veins on abaxial surface, entire or almost entire, 15–33 cm long, 2.5–6 mm wide. Scape complanate, narrowly 2-winged, 8–19 cm long. Inflorescence racemose, 2.3–12 cm long. Floral buds conical. Flowers cernuous, secund, 1–2 in each axil

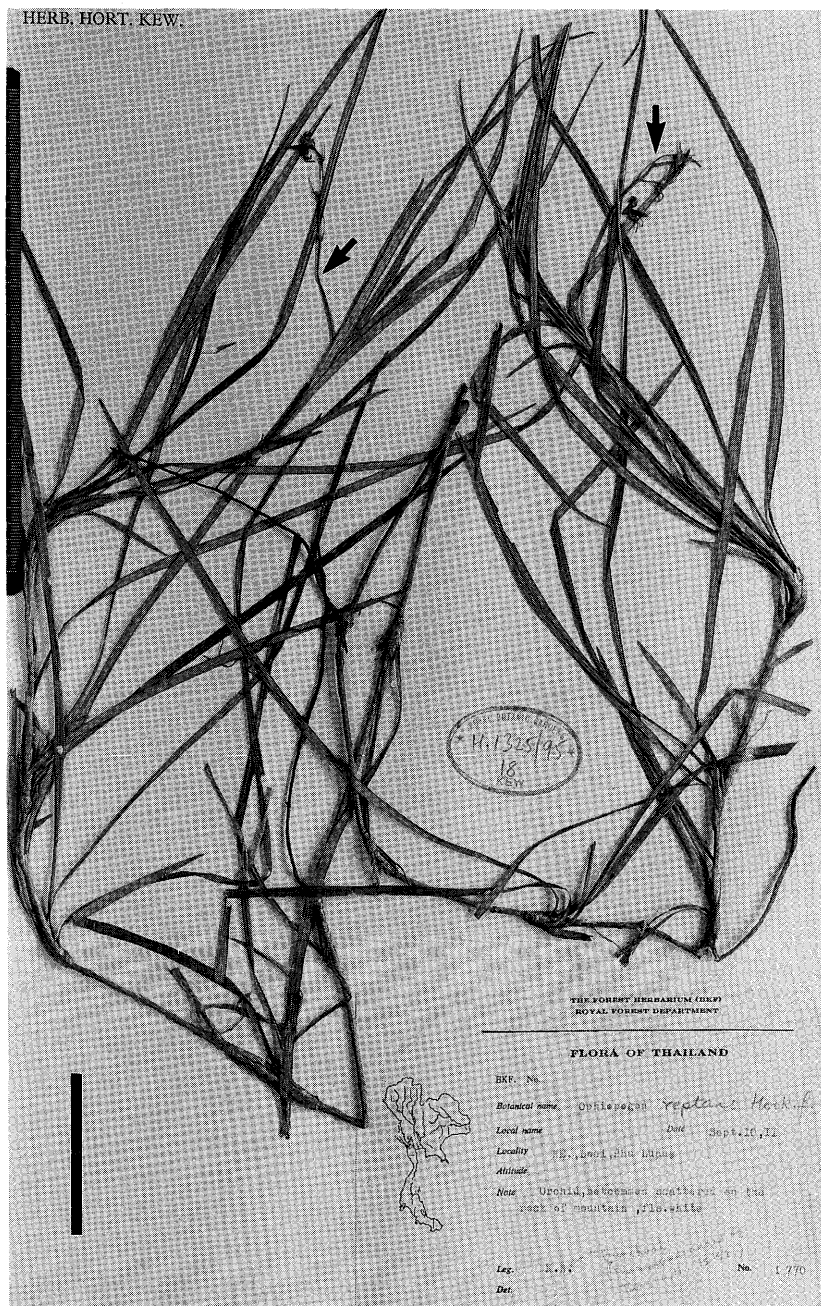


Fig. 4. Isoparatype specimen of *Ophiopogon kradungensis* (NE Thailand, K.Bunchuai 1770, K). The arrows indicate the flowering scapes. Scale bar (in the lower left corner) = 5 cm.

of clustered bracts, white (K.Bunchuai 1770, K). Bracts lanceolate, acute or acuminate, entire or almost entire, scarious at margin, greenish, up to c.2 cm long. Pedicels 5.5–9.2 mm long incl. lower stalky part of perianth (true pedicels, excl. perianth part, 1.5–3.2 mm long), jointed in lower part. Perianth lobes 6, lanceolate to linear-lanceolate, obtuse, 1-veined, spreading and reflexed, 7.5–8.5 mm long, 1.6–2.6 mm wide. Stamens 6, linear-lanceolate, sagittate or cordate at base, adherent laterally, 5.7–6.2 mm long. Filaments short. Pistil 1. Style filiform, slightly attenuate, 6–7.5 mm long. Seeds with sarcotesta, globose to subglobose, 6–6.5 mm long, 4–5.5 mm wide, dark blue (C.F.van Beusekom et al. 4541, K, P).

Distribution: NE Thailand.

Representative specimens examined:

Thailand. NE Prov., Loei, Phu Kradung, alt. c.1300 m, Dec. 24, 1971, fr., C.F.van Beusekom et al. 4541 (**isoparatype**, K, P); *ibid.*, alt. 1150–1250 m, Nov. 1, 1984, fr., G.Murata et al. T-42603 (**isoparatype**, TI); *ibid.*, alt. 700–1100 m, Oct. 31, 1984, fr., S.Mitsuta et al. T-42263 (**isoparatype**, TI); *ibid.*, alt. 1300 m, July 9, 1959, fl., Th.Sørensen et al. 7435 (**isoparatype**, K); *ibid.*, Khoon Phong waterfall (RS-25), alt. 1070 m, Sept. 9, 1988, fr., H.Takahashi

& M.N.Tamura T-60662 (**isoparatype**, TNS 599698); Loei, Phu Luang, Sept.10, 1911, fl., K.Bunchuai 1770 (**isoparatype**, K).

I express my deep gratitude to the keepers of the following herbaria for making their specimens available; BM, K, P, TI and TNS. I also thank Prof. Dr. Hideaki Ohba of the University of Tokyo and other anonymous reviewers for their helpful comments on this manuscript.

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田中教之：南アジア産ジャノヒゲ属の分類学的検討 IV

Ophiopogon griffithii の基準標本（インド北東部産）には花がなく、本種はこれまで分類学的にあまりよく理解されてこなかった種の一つである。筆者は *O. griffithii* と同定しうる花のある標本を3点見出した。1点はミャンマー産であり、他の2点は中国雲南省西南部産である。基準標本とこれらの花付きの標本の葉は比較的薄手（紙質）で、裏面は白色を帯び（粉緑色）、後者の（花付きの）標本で見ると、葯は側面で互いに合着し、花被片は盛花時に平開しかつ反曲する性質を持つ。詳しく標本を検討したところ、意外にも、本種の特徴は雲南省西南部から記載されていた *O. revolutus* のそれと基本的に一致することが分かった。従って *O. griffithii* は *O. revolutus* と同種であると判断した。本種の正名は *O. griffithii* であり、*O. revolutus* はその異名となる。本種は葉の幅ないし形に関して大きな変異を示す。狭い線状の葉を付ける個体がある

一方、基準標本（Fig. 1）や Fig. 2 の標本のよう比較的幅広い、広線形や狭楕円形あるいは狭倒披針形の葉を持つ個体がある。本種はインド北東部、ミャンマー中北部、タイ北部、中国雲南省西南部に分布する。ミャンマーにおける分布の記録は本報告が初めてである。タイでは *O. revolutus* の名において分布の記録がある。

Ophiopogon kradungensis は葉の幅などに変異が見られるが、とくに細葉を持つ個体は栄養部を見る限り、*O. reptans* とよく似ている。*O. kradungensis* の個体はかつて *O. reptans* として同定されたこともあったが、*O. kradungensis* の苞はほとんど全縁で、葯は側面で合着（接着）し、花被片は平開し反曲することや、花が全体的により大きいことなどの点において、*O. reptans* と容易に区別できる。一方、*O. kradungensis* の花部などに見られる特徴のいくつか（葯が合着することや、花被片

が平開し反曲すること、花被片、葯、花柱の形など)は、*O. griffithii* とよく一致することから、*O. kradungensis* は *O. griffithii* と密接な類縁関係を持

つ可能性がある。*O. kradungensis* はタイ北東部に分布する。
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